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(43) Date of A publication 22.02.1989

(22) Date of filing 13.04.1988

(30) Priority data
(31) 867759 (32) 13.04.1987 (33) ZA

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(58) Field of search
UK CL (Edition J) B3N
INT CL⁴ B25B

(54) Screwdriver

(57) Screw driver 10 comprises an elongate handle 11 having a blade 12 connected to one end thereof via neck 13. Blade 12 engages in a recess 14 in the head 15 of a screw 16 in known manner to drive the latter into a work piece 17. A tubular cap 18 is mounted on the handle for adjustment relative to the one end thereof. The cap serves to receive and hold head 15 of screw 16 while the screw is being driven into the work piece 17. The cap has a peripheral opening 18.5 through which the screw may be received, and also has a cutting edge for countersinking a recess in the workpiece for the head 15 of the screw. In a further embodiment the screw may be held in the cap by the peripheral region of head 15 cooperating with internal thread 18.2 of the cap.

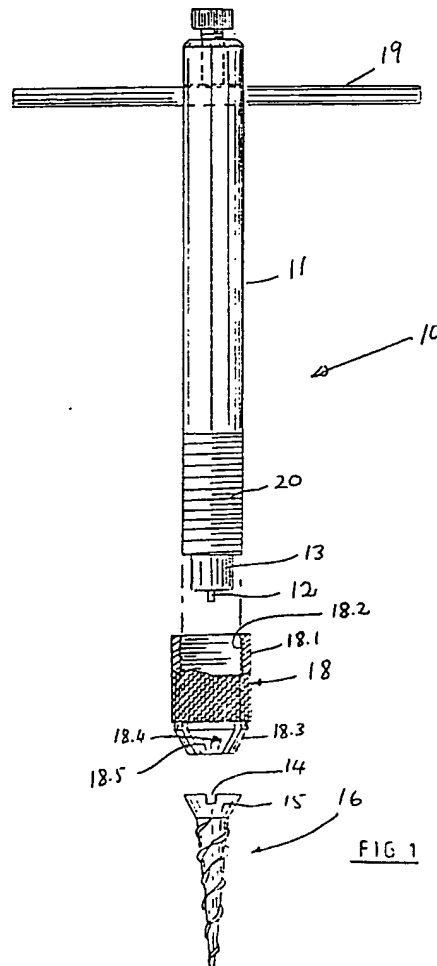
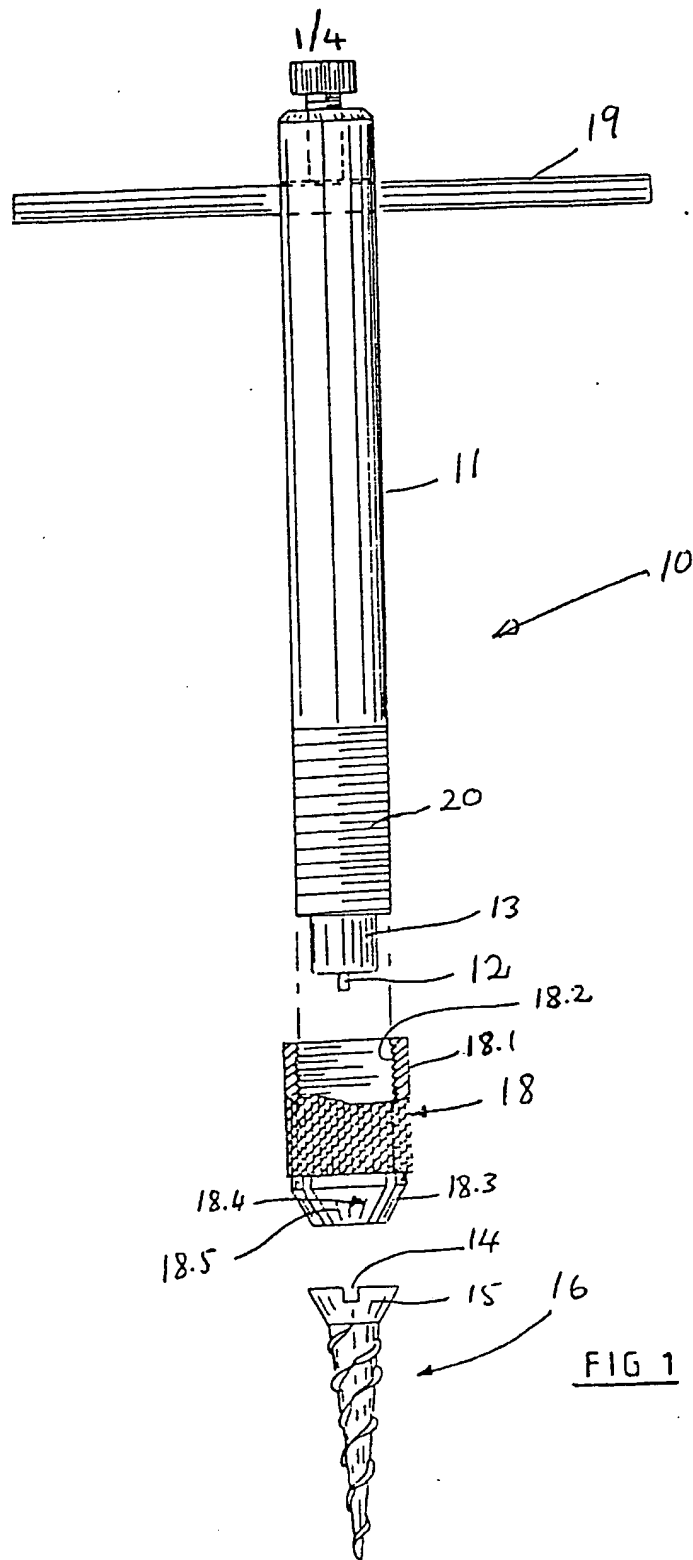


FIG 1

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy

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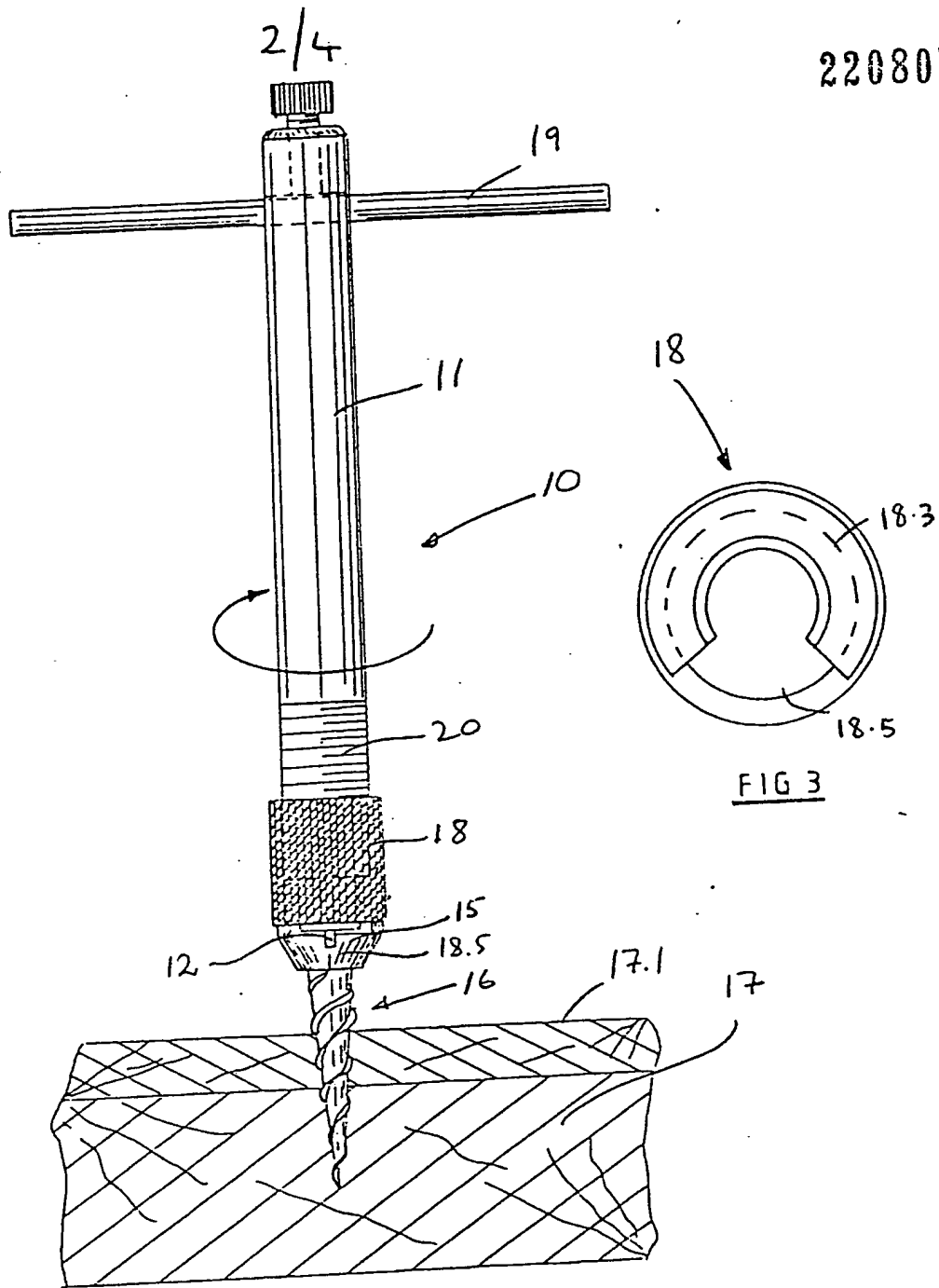
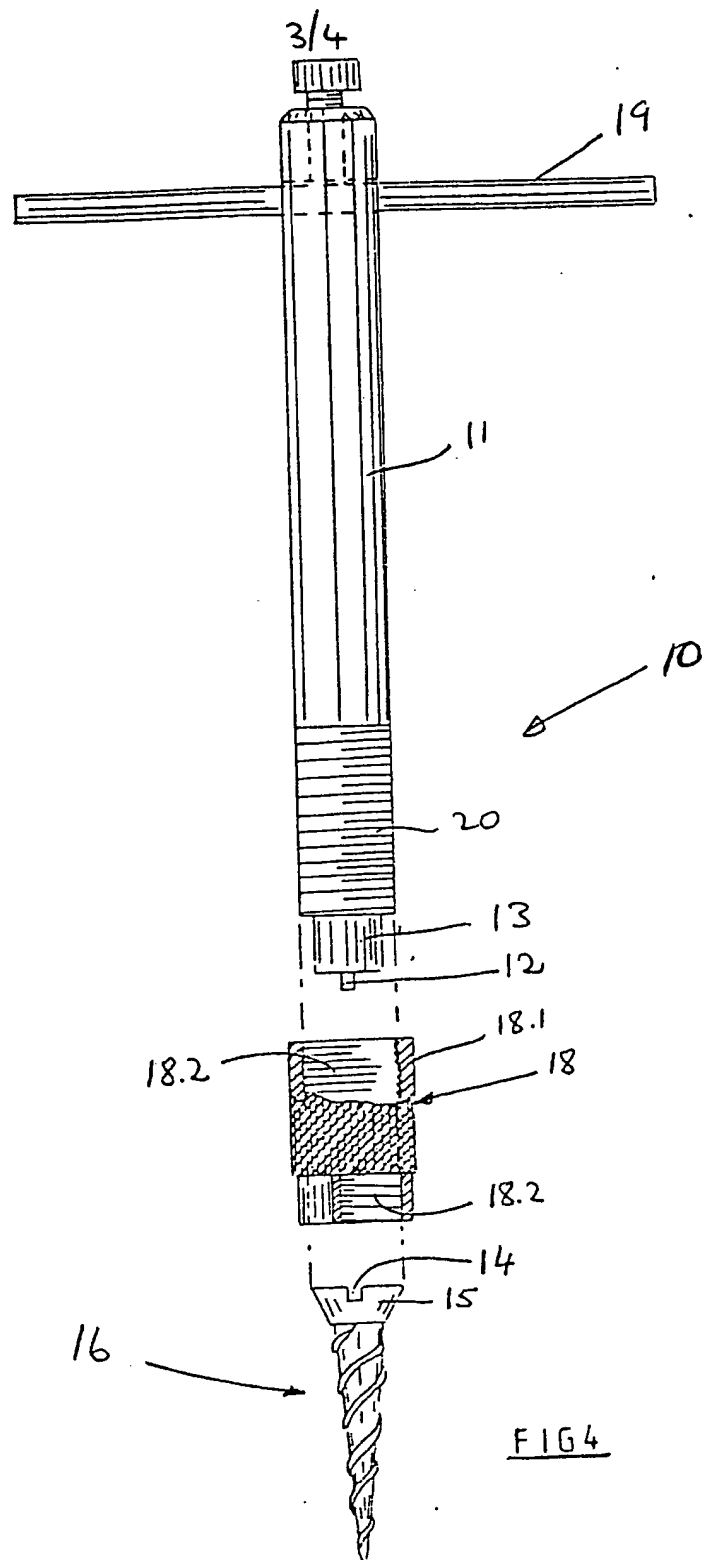
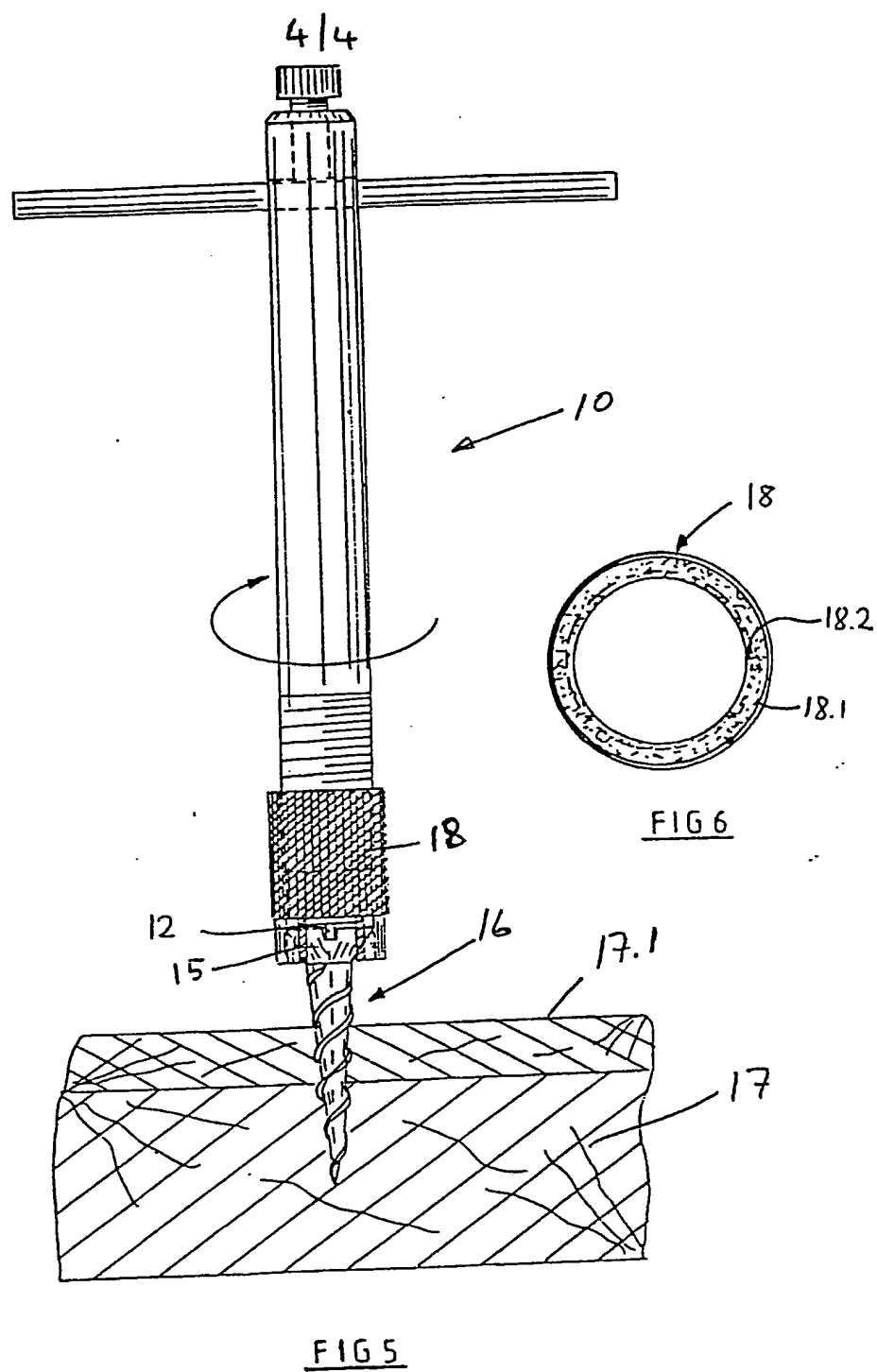


FIG 2

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Screw-Driver

According to the invention a screw-driver comprises:

- a handle;
- a rotary motion transmission member for engaging in a recess defined in the head of a screw to be driven into a work piece, the member being connected to the handle at one end thereof;
- a tubular cap mounted on the handle for adjustment relative to the one end of the handle; and
- the cap being adapted to receive and hold the screw head such that the transmission member is held in the recess while the screw is being driven into the work piece.

The handle preferably comprises an elongate member and the transmission member is rigidly connected to the one end of the elongate member so that the transmission member and longitudinal axis of the handle, in use, are on the rotation axis of the screw.

The cap may have an internal thread and the handle towards the one end thereof may have an external thread for cooperation with the thread in the cap so that the cap may rotatably be adjusted on the handle.

In a first embodiment of the screw driver according to the invention the cap defines an internal thread towards its end remote from the handle for receiving the periphery of the screw head thereby to hold the head.

In another embodiment of the screw driver according to the invention, the cap, at the end thereof remote from the handle, comprises a downwardly extending annular skirt defining a socket, the skirt defining a peripheral opening for admitting the screw head into the socket where it may be received and held.

At its end remote from the handle the cap may comprise a cutting edge adapted to cut into the work piece.

The screw driver according to the invention may comprise a tommy bar mounted towards the other end of the handle to facilitate rotation of the screw driver while driving the screw into the work piece.

The invention will now further be described by way of example only with reference to the accompanying diagrams wherein:

Figure 1 : is an exploded partially broken away elevational view of a first embodiment of a screw driver according to the invention;

Figure 2 : is an elevational view of the screw driver in figure 1 holding a screw which is to be driven into a work piece;

Figure 3 : is a bottom view of the tubular cap of the embodiment of the screw driver shown in figures 1 and 2;

Figure 4 : is an exploded partially broken away elevational view of a second embodiment of the screw driver according to the invention;

Figure 5 : is an elevational view of the screw driver in figure 4 holding a screw which is to be driven into a work piece; and

Figure 6 : is a bottom view of the tubular cap of the embodiment of the screw driver shown in figures 4 and 5.

The screw driver according to the invention is designated generally by the reference numeral 10 in figures 1, 2, 4 and 5.

Screw driver 10 comprises an elongate handle 11 having a rotary motion transmission member in the form of blade 12 connected to one end thereof via neck 13. The blade 12, in use, engages in a recess 14 defined in the head 15 of a screw 16 to transmit rotary motion from the handle 11 to the screw 16 in known manner to drive the latter into a work piece 17. A tubular cap 18 is mounted on the handle for adjustment relative to the one end thereof. The cap serves to receive and to hold head 15 of screw 16 such that blade 12 is held in the recess while the screw is being driven into the work piece 17 as shown in figures 2 and 5.

A tommy bar 19 is provided at the other end of handle 11 to facilitate rotation of handle 11 to drive screw 16 into the work piece 17.

The cap 18 of the embodiment shown in figures 1 to 3 comprises a tubular body 18.1 defining an internal thread 18.2. Thread 18.2, in use, cooperates with external thread 20 provided towards the one end of handle 11 so that the

position of cap 18 may be adjusted on handle 11. The cap also comprises a downwardly and inwardly extending annular scirt 18.3 defining a socket 18.4 for receiving the head 15 of screw 16. The scirt 18.3 has a peripheral opening 18.5 so that when the cap is moved in a direction transversely the longitudinal axis of the handle, the screw head 15 may be received in the socket 18.4 through opening 18.5.

By adjusting the position of cap 18 on handle 11 and by manipulating screw 16 in socket 18.4, blade 12 may be positioned in recess 13 in screw head 15. The screw is now held by the cap and may be driven into work piece 17 by rotating the handle about its longitudinal axis as shown in figure 2.

Cap 18 comprises a cutting edge (not shown) at the end thereof remote from the handle, i.e. the end facing the work piece, for countersinking a recess in the work piece wherein the head 15 of the screw may be received with its top flush with the surface 17.1 of the work piece.

The cap 18 of the embodiments shown in figures 4 to 6 comprises a tubular body 18.1, having an internal thread 18.2 extending along the whole of the length of body 18.1.

Screw 16 is received in the cap 18 by the peripheral region of head 15 cooperating with the thread 18.2. By manipulation of the cap 18 on handle 11 and screw 16 relative to cap 18 the blade 12 may be brought into engagement with recess 14 in head 15.

Screw 16 may now be driven into work piece 17 by rotating handle 11 about its longitudinal axis. When the cap 18 engages the surface 17.1 friction will cause it to come to a halt and to remain stationary relative to the work piece 17. Handle 11 engaging screw 16 via blade 12 will now rotate relative to stationary cap 18. Head 15 will hence be driven out of cap 18 and into the work piece 17 by handle 11 screwing into cap 18. It will be appreciated that with this embodiment the screw driver 10 may be used to drive the screw 16 all the way into work piece 17 until the top thereof is flush with the surface 17.1 of the work piece 17.

It will further be appreciated that many variations in detail are possible on the screw driver according to the invention without departing from the spirit and scope of the appended claims.

CLAIMS:

1. A screw driver comprising:

- a handle;
- a rotary motion transmission member for engaging in a recess in the head of a screw to be driven into a work piece, the member being connected to the handle at one end thereof;
- a tubular cap mounted on the handle for adjustment relative to the one end of the handle; and
- the cap being adapted to receive and hold the screw head such that the transmission member is held in the recess while the screw is being driven into the work piece.

2. A screw driver as claimed in claim 1 wherein the handle comprises an elongate member and wherein the transmission member is rigidly connected to the one end of the elongate member so that the member and longitudinal axis of the handle, in use, are on the rotation axis of the screw.

3. A screw driver as claimed in claim 1 or claim 2 wherein the cap has an internal thread and the handle towards the one end thereof has an external thread for cooperation with the thread in the cap so that the cap may rotatably

be adjusted on the handle.

4. A screw driver as claimed in any one of the preceding claims wherein the cap, towards its end remote from the handle, defines an internal thread for receiving the periphery of the screw head thereby to hold the head.

5. A screw driver as claimed in any one of claims 1 to 3 wherein the cap, at the end thereof remote from the handle, comprises a downwardly extending annular scirt defining a socket, the scirt defining a peripheral opening for admitting the screw head into the socket where it may be received and held.

6. A screw driver as claimed in claim 5 wherein the cap at the end remote from the handle has a cutting edge adapted to cut into the work piece.

7. A screw driver as claimed in any one of the preceding claims comprising a tommy bar mounted towards the other end of the handle.

8. A screw driver substantially as herein described with reference to the accompanying diagrams.